

## REMARKS

This paper is intended as a full and complete response to the Final Office Action dated January 08, 2008, having a shortened statutory period for response set to expire on April 08, 2008. Applicant respectfully requests entry and consideration of the following remarks. Applicant is filing a Request for Continued Examination with this Response.

Claims 1-17 are pending in the Application.

Claims 1, 10 - 12 and 17 are currently amended.

### I. Claim Rejections – 35 USC § 103

The Office Action rejected claims 1, 5-12, and 14-17 under 35 USC § 103(a) as being unpatentable over *Ehsani et al.* (US 2002/0032564) in view of *Valles* (US 2004/0083092).

Applicant's claim 1 teaches a method of generating a spoken dialogue application. The method includes generating a finite state machine from a context free grammar representation of a call flow, and generating a dialogue application code for a spoken dialogue application from the finite state machine, wherein the generated application code for the functions are executable during runtime of the spoken dialogue application. [See Applicant's amended claim 1]

Applicant traverses the Examiner's rejections for the following reasons.

First *Ehsani* teaches a dialogue finite state machine but its teaching of such a feature is limited to operation with a dialogue manager shown in Fig. 6. The dialogue finite state machine is only part of the dialogue manager. As such, the references does not teach that the finite state machine generates the dialogue application code. *Ehsani* teaches that the dialogue finite state machine is programmed to generate a response to each instruction passed on to the finite state machine. The finite state machine must interact with a user interface that has predesigned scripts. Therefore, the finite state machine taught by *Ehsani* is simply a dialog manager. [See *Ehsani*, paragraphs 0215 and 0216]. Further, there is no teaching in these paragraphs that the finite state machine (dialog manager) is generated from the NLU component as is asserted in the Office Action. In contrast to *Ehsani*, Applicant's claim 1 recites generating a finite state machine from

a context free grammar representation of a call flow. The finite state machine of Ehsani is not taught as being generated from a context free grammar representation of a call flow. This point is conceded in the Office Action. Support for this amendment can be found in Applicant's Original Specification, page 7, paragraph 0031.

Second, *Ehsani* teaches the use of a natural language understanding component (NLU), which does not generate the finite state machine used in the dialog manager of Figure 6. *Ehsani* only teaches that a recognition grammar that is generated for the speech recognition component of the dialog system. The NLU receives the text output of the speech recognition grammar converts. [See *Ehsani* paragraph 0214] *Ehsani* does not teach using the NLU to generate the finite state machine.

*Ehsani* does not teach or suggest generating the finite state machine from a context free grammar representation of a call flow, nor does *Ehsani* teach generating a dialogue application code for a spoken dialogue application from the finite state machine.

The Examiner has not indicated that *Valles* teaches or suggests a context free grammar used to generate a finite state machine, nor does *Valles* teach that a finite state machine to generate the dialogue application code. Since neither *Valles* nor *Ehsani* disclose or suggest all the features of claim 1 the section 103(a) rejection of the claim should be withdrawn.

Claims 5-9 depend upon claim 1. Therefore, claims 5-9 incorporate the elements of claim 1. Applicant believes, for the reasons stated above, that claims 5-9 teach past the art of record.

Claim 10 teaches a computer-readable medium that stores instructions for controlling a computer device to generate a spoken dialog application. The instructions include instructions for generating a finite state machine from a context free grammar representation of a call flow; and instruction for generating a dialogue application code for a spoken dialogue application from the finite state machine, wherein the generated application code for the functions are executable during runtime of the spoken dialog application. [See Applicant's amended claim 10]. Support for the amendments can be found in Applicant's Original Specification, page 7, paragraph 0031.

For the reasons stated above Applicant believes that the section 103(a) rejections should

be withdrawn, with respect to claim 10.

Claim 11 teaches a system for generating a spoken dialog application. The system includes a processor in communication with a module, wherein the module is configured to generate a finite state machine from a context free grammar representation of a call flow. The module is configured to generate application code, using the finite state machine, wherein the application code is generated dependent on how the finite state machine is traversed, for functions to be executed upon state transitions in the finite state machine. The generated application code for the functions are executable during runtime of said spoken dialog application. [See Applicant's amended claim 11]. Support for the amendments can be found Applicant's Original Specification, page 7, paragraph 0031.

For the reasons stated above in the discussion of claim 1 Applicant believes the section 103(a) rejection should be withdrawn, with respect to claim 11.

Applicant's claim 12 teaches a spoken dialog application method. The method includes traversing a finite state machine, that is generated from a context free grammar representation of a call flow, generating application code as the finite state machine is traversed, and invoking the generated application code for functions associated with nodes in the finite state machine, wherein each node of said finite state machine is mapped to a corresponding function. [See Applicant's amended claim 12]. Support for this amendment can be found in Applicant's Original Specification, page 7, paragraph 0031.

For the reasons stated above in the discussion of claim 1 applicant believes that the section 103(a) rejection should be withdrawn, with respect to claim 12.

Applicant's claims 14-16 depend on claim 12. Claims 14-16 incorporate the features of claim 12; therefore, Applicant believes the section 103(a) rejection as applied to claims 14-16 should be withdrawn.

Applicant's Claim 17 teaches a spoken dialog system. The spoken dialogue system includes a means for traversing a finite state machine, that is generated from a context free grammar representation of a call flow; a means for generating application code as the finite state

machine is traversed using the finite state machine; and a means for invoking the application code for functions associated with nodes in said finite state machine, wherein each node of said finite state machine is mapped to a corresponding function. [See Applicant's amended claim 17]. Support for this amendment can be found in Applicant's Original Specification, page 7, paragraph 0031.

For the reasons stated above in the discussion of claim 1, Applicant believes that the section 103(a) rejection should be withdrawn with respect to claim 17.

The Office Action rejected claims 2, 3, and 13 under 35 USC § 103(a) as being unpatentable over *Ehsani et al.* (US 2002/0032564) in view of *Valles* (US 2004/0083092) as applied to claim 1 and in further view of *Marx et al.* (US 6,173,266).

Claims 2 and 3 depend upon claim 1. Therefore, claims 2 and 3 incorporate the elements of claim 1.

*Marx* teaches a method for development of speech application dialog and using graphics to represent a call flow. [See *Marx*, abstract, lines 13-16].

For the reasons stated above, in the discussion of claim 1, *Ehsani* and *Valles* fail to teach the elements of claims 2 and 3. *Marx* further fails to teach all the elements of claim 1. Since claims 2 and 3 incorporate the elements of claim 1, Applicant believes that claims 2 and 3 each teach past the art of record and are in condition for allowance. Such allowance is respectfully requested.

Claim 13 depends upon claim 12. Therefore, claim 13 incorporates the elements of claim 12.

For the reasons stated above in the discussion of claim 12, the combination of *Ehsani* and *Valles* fail to teach all the elements of claim 12. *Marx* further fails to teach all the elements of claim 12. Since claim 13 incorporates all the elements of claim 12, Applicant believes that claim 12 teaches past the art of record and is in condition for allowance. Such allowance is respectfully requested.

The Office Action rejected claim 4 under 35 USC § 103(a) as being unpatentable over *Ehsani et al.* (US 2002/0032564) in view of *Valles* (US 2004/0083092) as applied to claim 1 and in further view of *Marx et al.* (US 6,173,266) and *Yuschik* (US 7,139,706).

Claim 4 depends on claim 1. Therefore, claim 4 incorporates the elements of claim 1.

For the reasons stated above *Ehsani* and *Valles* fail to teach all the elements of claim 1. Further *Marx* fails to teach all the elements of claim 1.

*Yuschik* teaches a method for developing automatic speech interface and using *Visio* for simulation of ASR and prompting dialog. [See *Yuschik*, abstract, and column 14, lines 43-53]. *Yuschik* fails to teach all the elements of claim 1.

The combination of *Ehsani*, *Valles*, *Marx*, and *Yushik* fails to teach all the elements of claim 1. Therefore, claim 4 teaches past the prior art of record and is in condition for allowance. Such allowance is respectfully requested.

In addition to the element-specific analysis outlined above, and assuming, without admitting, that the *Ehsani* and *Valles* references teach what is asserted by the Examiner, Applicant asserts that the Examiner's combination of the *Ehsani* and *Valles* patents is motivated by hindsight, rather than by a teaching or suggestion within the prior art.

To establish a *prima facie* case of obviousness, the Examiner must meet three criteria. First, there must be some motivation or suggestion, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to combine the references. Second, there must be a reasonable expectation of success, and finally, the prior art references must teach or suggest all the claim limitations. The Examiner bears the initial burden of providing some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." MPEP 2142.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP 2143.01, Section VI. *In re Ratti*, the court reversed the rejection holding the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.” *Id.* Applicants standard of proof is only by a preponderance of the evidence. Applicants shall next explain why there is more evidence against the combination of the references than support such a combination. In fact, there are convincing reasons why one of skill in the art would actually be led away from combining *Valles* with *Ehsani*.

*Valles* in the abstract and in paragraphs 5, 7, and 8 criticizes the method of developing methods of dialogue systems that utilize dialogue call flows. Specifically, *Valles* states that the general principal of the invention is to provide “an apparatus capable of maintaining unrestricted conversations with human beings, without imposing on such human what they can say or cannot say and lets users be spontaneous in their conversation” [See *Valles* Paragraph 30]. In other words, the fundamental principle of operation of the *Valles* invention is that the use of call flows inhibits human interaction and their invention replaces the concept of call flows with a different approach. Thus, *Valles*’ idea is to change a dialog system and teaches away from implanting call flows as part of the system.

*In contrast to the teachings of Valles is Ehsani.* *Ehsani* requires a designed cal flow. [See *Ehsani* Paragraph 34]. *Ehsani* teaches that “the Dialogue Finite Machine can be implemented as a computer program that specifies the flow of the human-machine interaction” [See *Ehsani* Paragraph 215]

*Ehsani* specifically teaches that “[t]he first step in designing a recognition network for a voice-controlled dialogue system consists of specifying the call flow in such a way as to anticipate the logic of the interaction.” [See *Ehsani* Paragraph 0222]

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The desirability of the combination of *Ehsani* with *Valles* is not suggested by the prior art of record. Particularly, desirability in the prior art is absent to combine *Valles*, which criticizes the use of a call flow and introduces a method of developing a dialogue system that does not use a call flow, with *Ehsani* which relies on the use of a designed call flow to work.

To blend *Valles* with *Ehsani*, one would have to modify *Ehsani* not to use the call flow. The removal of the call flow from *Ehsani* would entirely change the operation of *Ehsani*. That is, if *Ehsani* was modified to not include a call flow then the concept of expanding a call flow into a recognition grammar, as is the invention of *Ehsani*, could not occur. Therefore, the suggested combination of *Valles* with *Ehsani* would require a substantial reconstruction and redesign of the elements shown in *Ehsani* as well as a change in the basic principal under which *Ehsani* was designed to operate. The courts have reversed 103(a) rejections when "the suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Furthermore, if the examiner determines there is factual support for rejecting the claimed invention under 35 U.S.C. 103, the examiner must then consider any evidence supporting the patentability of the claimed invention, such as any evidence in the specification or any other evidence submitted by the applicant. The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of "a preponderance of evidence" requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not. MPEP 2142.

Applicant believes that he has provided argument that overcomes the 103(a) rejection by a preponderance of the evidence. Applicants arguments is especially potent given the criticism of the use of call flows by *Valles* and the fact that the application and use of call flows is required in *Ehsani* in order for the expansion process to be utilized to generate a recognition grammar for the speech recognition component of their dialog system. Thus, there are express teachings away from such a combination.

Applicant believes that in view of the above argument that claims 1-17 are in condition for allowance, and such allowance is respectfully requested.

Applicant appreciates the Examiner's time and attention to this matter. Applicant believes no new matter has been added with any amendments that have been made and the claims, as now provided, are in condition for allowance. Reconsideration of this application is respectfully requested.

Respectfully submitted,



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Wendy Buskop  
Registration. No. 32,202

Please mail correspondence to the address associated with customer number 26652.

AT&T CORP.  
ROOM 2A-207  
ONE AT&T WAY  
BEDMINSTER, NJ 07921